FINAL STATEMENT OF REASONS
FOR
PROPOSED BUILDING STANDARDS
OF THE
DIVISION OF THE STATE ARCHITECT - STRUCTURAL SAFETY (DSA-SS)

REGARDING THE 2007 CALIFORNIA BUILDING CODE
CALIFORNIA CODE OF REGULATIONS, TITLE 24, PART 2

The Administrative Procedure Act requires that every agency shall maintain a file of each rulemaking that shall be deemed to be the record for that rulemaking proceeding. The rulemaking file shall include a final statement of reasons. The Final Statement of Reasons shall be available to the public upon request when rulemaking action is being undertaken. The following are the reasons for proposing this particular rulemaking action:

UPDATES TO THE INITIAL STATEMENT OF REASONS:

(Government Code Section 11346.9(a) (1) requires an update of the information contained in the initial statement of reasons. If update identifies any data or any technical, theoretical or empirical study, report, or similar document on which the state agency is relying that was not identified in the initial statement of reasons, the state agency shall comply with Government Code Section 11347.1)

There are no revisions to the Initial Statement of Reasons, as shown below (pages 1 through 41). DSA-SS responses to public comments received during the 45 Day and 15 Day Public Comment Periods are provided, commencing on page 42.

STATEMENT OF SPECIFIC PURPOSE AND RATIONALE:

(Government Code Section 11346.2 requires a statement of specific purpose of each adoption, amendments, or repeal and the rational determination by the agency that each adoption, amendment, or repeal is reasonably necessary to carryout the purpose for which it is proposed).

- When repealing adopted California original standards, summarize the effect of the standards and explain why the standard is no longer necessary
- When amending a standard, explain the standard proposed to be modified, explain the effect of the proposed modification, explain the inadequacy of the standards being modified, and explain why the proposed amendment is necessary)

The general purpose of this proposed action is principally intended to update and codify a new edition of the California Building Code (California Code of Regulations, Title 24, Part 2) based upon a more current edition of a model code. The current California Building Code (CBC) in effect is the 2001edition California Building Code, which is based upon the 1997 edition *Uniform Building Code* (UBC) of the International Conference of Building Officials.

This proposed action:

- Repeals the 1997 edition *Uniform Building Code* of the International Conference of Building Officials and incorporates and adopts in its place the 2006 edition *International Building Code* (IBC) of the International Code Council for application and effectiveness as the 2007 California Building Code, pursuant to Health and Safety Code Section 18928. Health and Safety Code Section 18928 requires any state agency adopting model codes to adopt the most recent edition.
- Repeals DSA-SS amendments contained in the 2001 edition California Building Code (based on the 1997 edition UBC) that are sufficiently addressed by the new model code or are no longer necessary nor justified pursuant with Health and Safety Code 18930 (a) (7).
- Adopts and implements additional necessary amendments to the 2006 edition IBC that address specific requirements of California laws and regulations applicable to DSA-SS jurisdiction.
- Codifies non-substantive editorial and formatting amendments from the format based upon the 1997 UBC to the format of the 2006 IBC.

Overview of Proposed Changes to Title 24, Part 2 by DSA-SS

DSA-SS's proposed adoption of model building code provisions and amendments are applicable to public elementary and secondary schools, community colleges, and state essential services facilities.

The scope of this proposal can be categorized into three proposed actions:

1. Adoption of Non-Structural Model Code Provisions: Adoption of model building code (International Building Code) non-structural chapters without DSA-SS amendment, which includes Chapters 2 through 10, 12, 26, 30, 31, and 32.

The non-structural chapters that are not proposed for adoption (e.g. 11, 13, 27, 28, 29) are substantially modified by other state agencies. The purpose of this proposed adoption is to clarify the applicability of comprehensive model building code provisions for DSA-SS regulated occupancies.

2. Adoption of Model Code Structural Provisions and DSA-SS Structural Safety Amendments: Adoption of structural safety amendments and model building code provisions, which includes both the structural design chapters (16A, 17A, 18A, 19A, 20, 21A, 22A, 23), and certain non-structural chapters with DSA-SS amendments (14, 15, 24, 25, 33, 34, and 35).

The Division of the State Architect - Structural Safety (DSA-SS) and the Office of Statewide Health Planning (OSHPD) have developed and coordinated a joint package of the Express Terms and Initial Statement of Reasons for the adoption of structural safety amendments and model code provisions.

Due to the quantity of amendments to model code chapters 16, 17, 18, 19, 21 and 22, it is proposed that the use of "A" versions of these chapters be continued, as has been done since the 1989 edition CBC. The quantity of amendments proposed for chapters 14, 23, and 25 have been sufficiently reduced from those in the 2001 CBC, that "A" versions of those chapters is not warranted.

3. Adoption of Seismic Retrofit Regulations for Public School Buildings: Updating and relocation of seismic retrofit regulations contained in Division VI-R of Chapter 16A, 2001 CBC, into chapter 34 (Existing Buildings) of the 2007 CBC.

DSA-SS developed and coordinated these streamlining revisions with the Department of General Services, Building Standards Commission (BSC) staff, the University of California and California State University, Administrative Office of the Courts, and the Seismic Safety Commission staff. Refer to the separate code change proposal by the BSC and DSA for application to state-owned buildings.

The specific purpose and rationale of each adoption, amendment, or repeal is as follows:

Title 24, Part 2, Chapters 14, 15, 16A, 17A, 18A, 19A, 20, 21A, 22A, 23, 24, 25, 33, 34, 35, and Appendix J:

The Division of the State Architect (DSA-SS) adopts California Building Code (CBC) requirements for application to public elementary and secondary schools, community colleges, and state essential services facilities. The requirements governing the structural design and construction of DSA-SS regulated facilities are currently found in the structural chapters of the 2001 CBC. These chapters are based on the structural provisions of 1997 Uniform Building Code (UBC).

Pursuant to the direction of the California Building Standards Commission, the 2007 CBC shall be based on the 2006 IBC. This proposal represents DSA-SS's adoption of the 2006 IBC for incorporation into the 2007 triennial edition California Building Code. In addition, DSA-SS proposes the adoption of Chapters 16A, 17A, 18A, 19A, 21A, and 22A, based upon the 2006 IBC Chapters 16, 17, 18, 19, 21, and 22, with state amendments.

The specific purpose and rationale for the amendments in the 2007 CBC Chapter 14 provisions:

CHAPTER 14
EXTERIOR WALLS

REPEAL OF EXISTING CALIFORNIA AMENDMENTS IN PART OR IN WHOLE THAT ARE NO LONGER NECESSARY:

The 2006 IBC uses referenced standard for design and materials requirements with amendments rather than incorporating them into the building codes as was done in the 2001 CBC, which is based on the 1997 UBC. Since two code cycles (2000 & 2003) have passed between the 1997 UBC and the 2006 IBC, some of the design concepts and philosophies contained in the 2001 CBC have become obsolete or irrelevant.

Amendments contained in the 2001 CBC are repealed except those shown in the Express Terms. Where an entire

amendment in a section or subsection is repealed it is shown as stricken through the section or subsection numbers. When amendments are carried forward, the amended language is shown in the express terms and part of the text that is repealed is shown in strike-out. The first column of the adoption matrix shows which amendments are carried forward. The second column shows where the amendment has been relocated to (by section). Any modification to amendments being carried forward is indicated with the purpose and rationale stated.

Section 1405.1.1 – This reference is added to seismic design requirements in Section 1408 for proper use of the section.

Section 1405.10.4 – This section refers to the ICC Electrical Code for grounding of metal veneers. DSA is proposing to replace the reference to the ICC Electrical Code with the California Electrical Code. The amendment is necessary to ensure that the statutory code is properly referenced.

Section 1408.3 (Relocated from 1403A.4.1, 1403A.4.4, 1403A.5.3, 1403A.5.6 and 1405A.1, CBC 2001) – This section retains the requirements for adhered and anchored veneer design, testing and inspection from the 2001CBC. This change simply moves current amendments, which are not addressed by model code, to a new section of the code to be consistent with the IBC format.

The specific purpose and rationale for the amendments in 2007 CBC Chapter 15 provisions:

CHAPTER 15
ROOF ASSEMBLIES AND ROOFTOP STRUCTURES

REPEAL OF EXISTING CALIFORNIA AMENDMENTS IN PART OR IN WHOLE THAT ARE NO LONGER NECESSARY:

The 2006 IBC uses referenced standard for design and materials requirements with amendments rather than incorporating them into the building codes as was done in the 2001 CBC, which is based on the 1997 UBC. Since two code cycles (2000 & 2003) have passed between the 1997 UBC and the 2006 IBC, some of the design concepts and philosophies contained in the 2001 CBC have become obsolete or irrelevant.

Amendments contained in the 2001 CBC are repealed except those shown in the Express Terms. Where an entire amendment in a section or subsection is repealed it is shown as stricken through the section or subsection numbers. When amendments are carried forward, the amended language is shown in the express terms and part of the text that is repealed is shown in strike-out. The first column of the adoption matrix shows which amendments are carried forward. The second column shows where the amendment has been relocated to (by section). Any modifications to amendments being carried forward are indicated with the purpose and rationale stated.

Section 1503.4 – This section refers to the International Plumbing Code for roof drainage system design and installation. DSA is proposing to replace the reference to the International Plumbing Code with the California Plumbing Code. California Plumbing Code is proposed to be based upon the Uniform Plumbing Code, the amendment is necessary to ensure that the statutory code is properly referenced and to ensure changes to the Uniform Plumbing Code proposed by DSA are applied and enforced. Without this amendment, the non-amended International Plumbing Code would apply.

Section 1507.3.10 – The reference is added to seismic design requirements in Section 1511 for proper use of the section.

Section 1507.7.7 – The reference is added to seismic design requirements in Section 1511 for proper use of the section.

Section 1511 (Relocated from 1507.1.1, 1507.7.1 & 1507.11.1, CBC 2001): – This section retains the seismic design requirements for roof fasteners, wire and metal strip from Sections 1507.1.1, 1507.7.1 & 1507.11.1 of the 2001 CBC. This change simply moves current standards, which are not addressed by model code, to a new section of the code to be consistent with the IBC format. Also, an alternative design procedure is added to provide criteria for approval of alternative designs.

The specific purpose and rationale for the amendments in 2007 CBC Chapters 16A provisions:

Section 1614A.1.21 (Relocated from 1661A.2.9, CBC 2001) – This section retains the requirements for prototype & production isolator testing from Section 1661A.2.9 of the 2001CBC. This change simply moves current standard, which is not addressed by the model code, to a new section of the code to be consistent with the IBC format.

Section 1614A.1.22 (Relocated from 1661A.2.8, CBC 2001) – This section retains the requirements for instrumentation of base isolated buildings from Section 1661A.2.8 of the 2001CBC. This change simply moves current standard, which is not addressed by the model code, to a new section of the code to be consistent with the IBC format.

Section 1614A.1.23 (Relocated from 1661A.3.2, CBC 2001) – This section retains the requirements for building separation above base isolation for base isolated buildings from Section 1661A.3.2 of the CBC 2001. This change simply moves current standard, which is not addressed by the model code, to a new section of the code to be consistent with the IBC format.

Section 1614A.1.24 (Relocated from 1657A.5.3.3, CBC 2001) – This section retains the requirements for site specific ground spectra from Section 1657A.5.3.3 of the 2001 CBC. This is original UBC 1997 language carried forward as an amendment. This change simply moves current standard, which is not addressed by the model code, to a new section of the code to be consistent with the IBC format.

Section 1614A.1.25 (Relocated from 1659A.4.2, CBC 2001) – This section retains the requirements for ground motion time history scaling for isolated buildings from Section 1659A.4.2 of the 2001 CBC. Change is necessary to avoid conflict between this section and the definition in ASCE 7-05, Section 11.2.This change simply moves current standard, which is not addressed by the model code, to a new section of the code to be consistent with the IBC format.

Section 1614A.1.26 (Relocated from 1657A.5.2, CBC 2001) – This section retains the limitation for use of static force procedure in design of base isolated building from Section 1657A.5.2 of the 2001 CBC 2001. This change simply moves current standard, which is not addressed by the model code, to a new section of the code to be consistent with the IBC format.

Section 1614A.1.27 (Relocated from 1657A.5.3, CBC 2001) – This section retains the limitation for use of response spectrum procedure for design of base isolated buildings from Section 1657A.5.3 of the 2001 CBC. This change simply moves current standard, which is not addressed by the model code, to a new section of the code to be consistent with the IBC format.

Section 1614A.1.28 (Relocated from 1657A.5.1.1, CBC 2001) – This section retains the requirements for period separation in base isolated buildings from Section 1657A.5.1.1 of the 2001CBC. This change simply moves current standard, which is not addressed by the model code, to a new section of the code to be consistent with the IBC format.

Section 1614A.1.29 (Relocated from 1664A.1, CBC 2001) – This section retains the requirements for design review of base isolated building design from Section 1664A.1 of the 2001 CBC. This change simply moves current standard, which is not addressed by the model code, to a new section of the code to be consistent with the IBC format.

Section 1614A.1.30 – This section makes the requirements for use of non-linear time history analysis procedure uniform for all structures with damping devices.

Section 1614A.1.31 – This section will ensure uniformity in production testing for all buildings with damping devices.

The specific purpose and rationale for the amendments in 2007 CBC Chapters 17A provisions:

CHAPTER 17A
STRUCTURAL TESTS AND SPECIAL INSPECTIONS

REPEAL OF EXISTING CALIFORNIA AMENDMENTS IN PART OR IN WHOLE THAT ARE NO LONGER NECESSARY:

The 2006 IBC uses referenced standards for design and materials requirements with amendments rather than incorporating them into the building codes as was done in the 2001 CBC, which is based on the 1997 UBC. Since two code cycles (2000 & 2003) have passed between the 1997 UBC and the 2006 IBC, some of the design concepts and philosophies contained in the 2001 CBC have become obsolete or irrelevant. Repeal of California amendments for those sections where the 2001 CBC design concepts become obsolete or irrelevant are not addressed explicitly. Amendments contained in the 2001 CBC are repealed except those shown in the Express Terms. Where an entire amendment in a section or subsection is repealed it is shown as stricken through the section or subsection numbers. When amendments are carried forward, the amended language is shown in the express terms and part of the text that is repealed is shown in strike-out. The first column of the adoption matrix shows which amendments are carried forward. The second column shows where the amendment has been relocated to (by section). Any modification to amendments being carried forward is indicated and purpose and rationale stated.

Section 1701A.1 – The scope is revised by adding Sections 1701A.1.1 and 1701A.1.2 to clarify the application of Chapter 17A to DSA-SS applications. Chapter 17A is based on the 2006 International Building Code (IBC), Chapter 17. To accommodate the substantial number of amendments for public school buildings and continued operation occupancy structures in moderate to high seismic areas, this amended Chapter 17A is created.

Section 1701A.5 (Relocated from 1701A.1.1, CBC 2001) – This section retains the requirement for the owner to retain special inspectors in addition to inspector(s) of record from the 2001 CBC, Section 1701A.1.2. Part of the text is the original 1997 UBC language. This change is consistent with the 2006 IBC requirements. This change is required to refer to proper sections of CCR Title 24, Part 1, which also require appointment of Inspector(s) of Record. Change is necessary to provide consistency with Title 24 Part 1, (Sec. 4-333(b), 4-342), which uses the term "project inspector" instead of "inspector of record." Title 24, Part 1, (Section 4-333 (b)) does not provide for employment of special inspectors by the design professional in responsible charge, and requires that the costs for special inspection by paid by the school board.

Section 1702A.1 – The section reference is revised to accommodate relocation of the 2006 IBC Chapter 1 to Appendix as Appendix Chapter 1 for the 2007 CBC.

Section 1704A.1 – The section references are revised to accommodate relocation of the 2006 IBC, Chapter 1 to Appendix as Appendix Chapter 1 for the 2007 CBC. Change is necessary to be consistent with Sections 1701A.4 and 1701A.5.

Section 1704A.1.1 – The section references are revised to accommodate relocation of the 2006 IBC, Chapter 1 to Appendix as Appendix Chapter 1 for the 2007 CBC. Also, the exception provided for wood structures designed under Section 2308 is removed since construction inspection is vital for immediate occupancy structures.

Section 1704A.1.2 (Relocated from 1701A.3.2, CBC 2001) – This section retains the requirements for an inspection report to include the requirements of CCR Title 24, Part 1 from 2001 CBC, Section 1701A.3.2.This change simply moves current standards, which are not addressed by model code, to a new section of the code to be consistent with the IBC format. Change is necessary to provide consistency with Section 1701A.5 and Title 24, Part 1, Section 4-333 (b) and 4-342, which uses the term "project inspector" instead of "inspector of record."

Section 1704A.2.1 (Exception) – This section codifies current DSA practice of requiring special inspection in shop for certain materials or assemblies. Otherwise, this would be a relaxation of requirements from the 2001 CBC, which requires the same special inspection in the shop as in the field for DSA-SS regulated facilities.

Section 1704A.3.1.1 (Relocated from 2231A.5, CBC 2001) – This section retains the requirement for inspection of welding and welder qualifications from Section 2231A.5 of the 2001 CBC. This change simply moves current standard, which is not addressed by model code, to a new section of the code to be consistent with the IBC format.

Section 1704A.3.2.1 (Relocated from 2231A.4, CBC 2001) – This section retains the requirements for significant steel structural detailed connections to be shop inspected when directed by enforcement agency from Section 2231A.4 of the 2001 CBC. This change simply moves current standards, which are not addressed by model code, to a new section of the code to be consistent with the IBC format.

Section 1704A.3.2.2 (Relocated from 2231A.5, CBC 2001) – This section retains the requirement for inspection of steel welding for joist and joist girder fabrication at shop from Section 2231A.5 of the 2001 CBC. This change simply

moves current standard, which is not addressed by model code, to a new section of the code to be consistent with the IBC format.

Section 1704A.3.2.3 (Relocated from 2231A.5, CBC 2001) – This section retains the requirement for inspection of welds for light framed steel truss from Section 2231A.5 of the 2001 CBC. This change simply moves current standard, which is not addressed by model code, to a new section of the code to be consistent with the IBC format.
Section 1704A.4 (Exception) – Waiver of special inspection requirements for concrete - The entire model code exception is deleted because it is inconsistent with current DSA practice and considered inappropriate for public schools and continued operation occupancy structures in Seismic Design Categories D, E & F.

Table 1704A.4 (Relocated from 1701A.5 Item 18, CBC 2001) – This table retains the requirements for inspection of post-installed anchors from Section 1701A.5 Item 18 of the 2001 CBC. This change simply moves current standards, which is not addressed by model code, to a new section of the code to be consistent with the IBC format.

Section 1704A.4.2 (Relocated from 1929A.12, CBC 2001) – This section retains the requirement for inspection of rebar welding and welder qualification from Section 1929A.12 of the 2001 CBC. This change simply moves current standard, which is not addressed by model code, to a new section of the code to be consistent with the IBC format.

Section 1704A.4.3 (Relocated from 1929A.4, CBC 2001) – This section retains the requirement for inspection of the batch plant from Section 1929A.4 of the 2001 CBC. This change simply moves current standard, which is not addressed by model code, to a new section of the code to be consistent with the IBC format.

Section 1704A.4.4 (Relocated from 1929A.5, CBC 2001) – This section retains the requirements for waiver of batch plant inspection from Section 1929A.5 of CBC 2001. Text changes are necessary to be consistent with Sections 1701A.4 and 1701A.5. This change simply moves current standard, which is not addressed by model code, to a new section of the code to be consistent with IBC format.

Section 1704A.4.5 (Relocated from 1929A.9, CBC 2001) – This section retains the requirements for inspection of prestressed concrete Section 1929A.9 of the 2001 CBC. This change simply moves current standards, which are not addressed by model code, to a new section of the code to be consistent with the IBC format.

Section 1704A.4.6 (Relocated from 1905A.7.1 Item 8, CBC 2001) – This section retains the requirement for concrete pre-placement inspection from Section 1905A.7.1 Item 8 of the 2001 CBC. This change simply moves current standard, which is not addressed by model code, to a new section of the code to be consistent with IBC format.

Section 1704A.4.7 (Relocated from 1929A.7, CBC 2001) – This section retains the requirements for placing record for concrete from Section 1929A.7 of the 2001 CBC. This change simply moves current standards, which are not addressed by model code, to a new section of the code to be consistent with the IBC format.

Section 1704A.5 (Exception) – Waiver for special inspection requirements for masonry – The entire model code Exception is deleted because it is inconsistent with current DSA practice and considered inappropriate for public schools and continued operation occupancy structures in Seismic Design Category D, E and F.

Section 1704A.5.1 – Empirically designed masonry, glass unit masonry and masonry veneer are not permitted in DSA-SS regulated facilities per Chapter 21A of the 2007 CBC. Empirically designed masonry, glass unit masonry and masonry veneer are removed from the requirements for special inspection in this section. Also, the inspection requirements for Occupancy Categories II, III and IV are made uniform to ensure that there will be no non-inspected masonry construction and no change from 2001 CBC requirements.

Sections 1704A.5.2 and 1704A.5.3 - The inspection requirements for Occupancy Categories II, III and IV are made uniform to ensure uniformity in masonry construction.

Table 1704A.5.1 (Relocated from 1701A.5 Item 18, CBC 2001) – This table retains the requirements for inspection of post-installed anchors in masonry from Section 1705.5.18 of the 2001 CBC. This change simply moves current standards, which are not addressed by model code, to a new section of the code to be consistent with the IBC format.

Table 1704A.5.3 (Relocated from 1701A.5 Item 18, CBC 2001) – This table retains the requirements for inspection of post-installed anchors in masonry from Section 1705.5.18 of the 2001 CBC. This change simply moves current standards, which are not addressed by model code, to a new section of the code to be consistent with the IBC format.

Section 1704A.6 – This amendment is required for consistency with section 1704A.6.2 & 1704A.6.3.

Section 1704A.6.2 (Relocated from 2337A.1 & 2337A.3, CBC 2001) – This section retains the requirements for inspection of wood structural elements and assemblies (e.g. glued laminated timber, manufactured trusses, etc.) from Sections 2337A.1 & 2337A.3 of the 2001 CBC. This change simply moves current standards, which are not addressed by model code, to a new section of the code to be consistent with the IBC format.

For DSA-SS applications, this amendment provides for inspection of structural glued laminated timbers and wood trusses to ensure conformance with approved drawings and specifications, and Title 24. Conformance of structural glued laminated timber fabrication with code-referenced standard ANSI/-AITC A190.1 is typically established on the basis of independent periodic audits of the fabricator's quality control system by an accredited inspection and testing agency.

Conformance of structural glued laminated timbers with the project-specific requirements of the approved drawings has been determined on the basis of DSA's special inspection provisions, which have been in Title 24 for over fifty years. DSA is not aware of any significant problems or failures resulting from these requirements. The cost of these special inspections has been reported to DSA to be approximately 5% of the cost of the inspected product.

The Field Act (Education Code, Section 17280-17317) and the Essential Services Buildings Act (Health & Safety Code 16000-16023) requires comprehensive inspection of all construction by a project inspector, and by special inspectors for specialty work. These inspectors must verify that work conforms to Title 24 building standards and the construction documents.

DSA believes that inspection of these structural components, which are fabricated off-site, would be most effective if accomplished at the fabricator's plant, rather than at the project site. Visual inspection at the project site cannot provide for verification of all requirements of the approved drawings. In the event that non-conformance is determined by visual inspection at the project site, corrective action may adversely affect the project schedule to a much greater extent than if the inspection had occurred at the fabricator's plant.

Section 1704A.6.3 (Relocated from 2337A.2, CBC 2001) – This section retains the requirements for inspection of timber connectors from Section 2337A.2 of the 2001 CBC. This change simply moves current standards, which are not addressed by model code, to a new section of the code to be consistent with the IBC format.

Section 1704A.7.1 (Relocated from 3301.1, CBC 2001) – This section retains the requirements for inspection of soil fill from Section 3301.1 of the 2001 CBC. This change simply moves current standards, which are not addressed by model code, to a new section of the code to be consistent with the IBC format.

Section 1704A.8.1 (Relocated from 1809A.6, CBC 2001) – This section retains the requirements for pile observation from Section 1809A.6 of the 2001 CBC. This change simply moves current standards, which are not addressed by model code, to a new section of the code to be consistent with the IBC format.

Section 1704A.9.1 (Relocated from 1809A.7.1, CBC 2001) – This section retains the requirements for pier observation From Section 1809A.7.1 of the 2001CBC. Terms which are not defined by IBC 2006 are deleted. This change simply moves current standards, which are not addressed by model code, to a new section of the code to be consistent with the IBC format.

Section 1704A.15 (Relocated from 1929A.10 & 1924A.11.2, CBC 2001) – This section retains the requirements for inspection of shotcrete from Sections 1929A.10 and 1924A.11.2 of the 2001 CBC. This change simply moves current standard, which is not addressed by model code, to a new section of the code to be consistent with IBC format.

Section 1704A.16 (Relocated from 1701A.5 Item 8, CBC 2001) – This section retains the requirements for inspection of reinforced gypsum concrete from Section 1701A.5 Item 8 of the 2001 CBC. This change simply moves current standards, which are not addressed by model code, to a new section of the code to be consistent with the IBC format.

Section 1705A.3 – Exception is eliminated to be consistent with the special test, inspection and observation plan requirements for schools and hospitals per Title 24, Part 1, of the California Building Standards Administrative Code.

Section 1707A.3 (Exception) – Waiver for special inspection requirements for shear walls, shear panels and diaphragms - The entire model code Exception is deleted because it is inconsistent with current DSA practice and considered inappropriate for public schools and continued operation occupancy structures in Seismic Design Categories D, E and F.

Section 1707A.7 (Exception) – The waiver for special inspection requirements in the exception is deleted because it is inconsistent with current DSA practice and considered inappropriate for public schools and continued operation occupancy structures in Seismic Design Categories D, E and F.

Section 1707A.10 (Relocated from 1664A.3, CBC 2001) – This section retains the requirement for inspection of prototype and production testing of isolator units and energy dissipation devices that are part of the seismic isolation system from Section 1664A.3 of the 2001 CBC. This change simply moves current standard, which is not addressed by model code, to a new section of the code to be consistent with the IBC format.

Section 1708A.1.1 – Empirically designed masonry is not permitted in DSA-SS regulated facilities per Chapter 21A of the 2007 CBC. The requirement for special inspection of empirically designed masonry is deleted in this section to be consistent with Chapter 21A. The inspection requirements for Occupancy Categories II, III and IV are made uniform to ensure uniformity in masonry construction.

Section 1708A.1.2 – Empirically designed masonry is not permitted in DSA regulated facilities per Chapter 21A of the 2007 CBC. The requirement for special inspection of empirically designed masonry is deleted in this section to be consistent with Chapter 21A. The inspection requirements for Occupancy Categories II, III and IV are made uniform to ensure uniformity in masonry construction.

Table 1708A.1.2 and 1708A.1.4 – References to AAC masonry are deleted since it is not permitted per Chapter 21A.

Sections 1708A.1.3 and 1708A.1.4 - The inspection requirements for Occupancy Categories II, III and IV are made uniform to ensure uniformity in masonry construction.

Section 1709A.2 (Relocated from 1702A.2, CBC 2001) – This section retains the requirement for structural observation of all DSA-SS regulated facilities from Section 1702A.2 of the 2001 CBC. This is required by Item # 1 in Section 1709.2 of the 2006 IBC. The change only simplifies the code text.

Section 1709A.3 (Relocated from 1702A.2, CBC 2001) – This section retains the requirement for structural observation of all DSA-SS regulated facilities from Section 1702A.2 of the 2001 CBC. This is required by Item # 1 in Section 1709.2 of the 2006 IBC, change only simplify the code text.

Section 1711A.1 – The section reference is revised to accommodate relocation of the 2006 IBC Chapter 1 to the Appendix as Appendix Chapter 1 for the 2007 CBC.

The specific purpose and rationale for the amendments in 2007 CBC Chapters 18A provisions:

CHAPTER 18A
SOILS AND FOUNDATIONS

REPEAL OF EXISTING CALIFORNIA AMENDMENTS IN PART OR IN WHOLE THAT ARE NO LONGER NECESSARY:

The 2006 IBC uses referenced standards for design and materials requirements with amendments rather than incorporating them into the building codes as was done in the 2001 CBC, which is based on the 1997 UBC. Since two code cycles (2000 & 2003) have passed between the 1997 UBC and the 2006 IBC, some of the design concepts and philosophies contained in the 2001 CBC have become obsolete or irrelevant. Repeal of California amendments for those sections where the 2001 CBC design concepts or philosophies become obsolete or irrelevant are not addressed explicitly.

Section 1913A.13 (Relocated from 1924A.14, CBC 2001) – This section retains the requirements for placing shotcrete per ACI 506 from Section 1924A.14 of the 2001 CBC. This change simply moves current standards, which are not addressed by model code, to a new section of the code to be consistent with the IBC format.

Section1914A.1: Reinforced gypsum concrete is not typically used in the school buildings or state essential services facilities. No recent cyclic test data or performance data during an actual seismic event is available regarding the use of reinforced gypsum concrete. This system would be considered as an alternative system, for purposes of DSA review and approval.

Sections 1916A.1 through 1916A.7 (Relocated from 1929A, CBC 2001) – These sections retain the requirements for concrete testing from Section 1929A of the 2001 CBC. Language is revised as shown to be consistent with current DSA practice. This change simply moves current standards, which are not addressed by model code, to a new section of the code to be consistent with the IBC format.

Section 1916A.4 – This change is necessary to be consistent with Section 1916A.1, where cementitious material test requirement is replaced by certification requirement.

Section 1916A.8 (Relocated from 1923A.3.5, CBC 2001) – This section retains the requirement for testing of expansion bolts and chemical anchors from Section 1923A.3.5 of the 2001 CBC. This change simply moves current standard, which is not addressed by model code, to a new section of the code to be consistent with the IBC format.

Section 1917A (Relocated from 1930A, CBC 2001) – This section retains the requirements for existing concrete structures from Section 1930A of the 2001 CBC. Reference to strengthening existing unreinforced masonry is deleted because Section 2114A of the 2001 CBC has been proposed for repeal. This change simply moves current standards, which are not addressed by model code, to a new section to be consistent with the IBC format.

The specific purpose and rationale for the amendments in 2007 CBC Chapters 20 provisions:

CHAPTER 20
ALUMINUM

REPEAL OF EXISTING CALIFORNIA AMENDMENTS IN PART OR IN WHOLE THAT ARE NO LONGER NECESSARY:

The 2006 IBC uses referenced standards for design and materials requirements with amendments rather than incorporating them into the building codes as was done in the 2001 CBC, which is based on the 1997 UBC. Since two code cycles (2000 & 2003) have passed between the 1997 UBC and the 2006 IBC, some of the design concepts and philosophies contained in the 2001 CBC have become obsolete or irrelevant. Repeal of California amendments for those sections where the 2001 CBC design concepts or philosophies become obsolete or irrelevant are not addressed explicitly.

Amendments contained in the 2001 CBC are repealed except those shown in the Express Terms. Where an entire amendment in a section or subsection is repealed it is shown as stricken through the section or subsection numbers. When amendments are carried forward the amended language is shown in the Express Terms and part of the text that is repealed is shown in strike-out. The first column of the adoption matrix shows which amendments are carried forward. The second column shows where the amendment has been relocated to (by section). Any modifications to amendments being carried forward are indicated and purpose and rationale stated.

Section 2003.1 (Relocated from 2004A.8, CBC 2001): This section retains the requirements for inspection of aluminum from Section 2004A.8 of the 2001CBC. This change simply moves current standards, which are not addressed by model code, to a new section of the code to be consistent with the IBC format.

The specific purpose and rationale for the amendments in 2007 CBC Chapters 21A provisions:

CHAPTER 21A
MASONRY

REPEAL OF EXISTING CALIFORNIA AMENDMENTS IN PART OR IN WHOLE THAT ARE NO LONGER NECESSARY:

The 2006 IBC uses referenced standards for design and materials requirements with amendments rather than incorporating them into the building codes as was done in the 2001 CBC, which is based on the 1997 UBC. Since two code cycles (2000 & 2003) have passed between the 1997 UBC and the 2006 IBC, some of the design concepts and philosophies contained in the 2001 CBC have become obsolete or irrelevant. Repeal of California amendments for those sections where the 2001 CBC design concepts or philosophies become obsolete or irrelevant are not addressed explicitly.

Amendments contained in the 2001 CBC are repealed except those shown in the Express Terms. Where an entire amendment in a section or subsection is repealed it is shown as stricken through the section or subsection numbers. When amendments are carried forward the amended language is shown in the Express Terms and part of the text that is repealed is shown in strike-out. The first column of the adoption matrix shows which amendments are carried forward. The second column shows where the amendment has been relocated to (by section). Any modifications to amendments being carried forward are indicated and purpose and rationale stated. Amendments that are relocated from existing Chapter 21A to a chapter other than Chapter 21A are shown in the relocated chapters.

Section 2101A.1 – The scope is revised by adding Sections 2101A.1.1 and 2101A.1.2 to clarify application of Chapter 21A to DSA-SS regulated occupancies. Chapter 21A is based on Chapter 21 of the 2006 IBC. To accommodate the substantial number of amendments for immediate occupancy structures in moderate to high seismic areas, amended Chapter 21A was created.

Section 2101A.2.2 – Section 2101.2.2 of the IBC does not allow Autoclaved Aerated Concrete (AAC) Masonry in seismic force resisting systems in Seismic Design Category D, E and F. There is no cyclic test or past performance data to justify use of AAC masonry in non-load bearing walls of immediate occupancy structures subjected to seismic loads. Hence, AAC Masonry is not permitted for any application in DSA-SS regulated facilities.

Section 2101A.2.3 – Prestressed masonry walls are not allowed in Seismic Design Category D, E and F per ASCE 7 Table 12.2-1. The amendment in this section simply ensures that requirement of ASCE 7 is followed.

Section 2101A.2.4 (Relocated from 2109A, CBC 2001) – This section retains the prohibition in Section 2109A of the 2001 CBC regarding empirical design of masonry, which is not permitted in Seismic Design Categories D, E or F. This change simply moves current standard to a new section of the code to be consistent with the IBC format.

Section 2101A.2.5 (Relocated from 2110A .1, CBC 2001) – This section retains the additional requirements contained in Section 2110A.1 of the 2001 CBC regarding glass unit masonry for non-bearing non-structural walls. This change simply moves current standard to a new section of the code to be consistent with the IBC format.

Section 2102A.1 (Relocated from 2101A.3, CBC 2001 – This section retains the definition of "Hollow -unit Masonry Wall" from Section 2101A.3 of the 2001 CBC. This change simply moves current standard, which is not addressed by model code, to a new section of the code to be consistent with the IBC format.

Section 2103A.3 – This amendment is required to be consistent with Section 2101A.2.2.

Section 2103A.8 (Relocated from 2103A.3.1, CBC 2001) – This section retains the requirement for mortar to be limited to Type S, lime to be the last materials added to the mixer and aggregate to conform to ASTM C 144 from Section 2103A.3.1 of the 2001 CBC. This change simply moves current standard, which is not addressed by model code, to a new section of the code to be consistent with the IBC format.

Section 2103A.11 – This amendment is required to be consistent with Section 2101A.2.2.

Section 2103A.12 (Relocated from 2103A.4.2 / 2103A.4.3, CBC 2001) – This section retains the requirements for grout, proportioning, water and aggregate for grout from Sections 2103A.4.2 and 2103A.4.3 of the 2001 CBC. Part of the text is the original 1997 UBC language carried forward as an amendment. This change simply moves current standards, which are not addressed by model code, to a new section of the code to be consistent with the IBC format.

Section 2103A.13.6 – This amendment is required to be consistent with Section 2101A.2.3.

Section 2103A.13.7 – This amendment is required to be consistent with Section 2101A.2.3.

Section 2103A.14 (Relocated from 2103A.5, CBC 2001) – This section retains the requirements for additive and admixtures for grout and mortar from Section 2103A.5 of the 2001 CBC. Part of the text is the original 1997 UBC language which is carried forward as an amendment. This change simply moves current standards, which are not addressed by model code, to a new section of the code to be consistent with the IBC format.

Section 2104A.1.2 – This amendment is required to be consistent with Section 2101A.2.2.

Section 2104A.1.2.5 (Relocated from 2110A.2, CBC 2001) – This section retains the requirements for treating mortar contact surfaces for adhesion from Section 2110A.2 of the 2001 CBC. Part of the text is the original 1997 UBC language proposed to be carried forward as an amendment. This change simply moves current standards, which are not addressed by model code, to a new section of the code to be consistent with the IBC format.

Section 2104A.1.2.6 – This amendment is required to be consistent with Section 2101A.2.2.

Section 2104A.1.2.7 – This amendment is required to be consistent with Section 2104A.6.

Section 2104A.2 (Relocated from 2104A.4.5, 2001) – This section retains the requirements for corbelled masonry from Section 2104A.4.5 of the 2001 CBC. This change simply moves current standards which are more strict than new model code, to a new section of the code to be consistent with the IBC format.

Section 2104A.3.2.2 – This amendment is required to be consistent with Section 2101A.2.2.

Section 2104A.3.3.2 – This amendment is required to be consistent with Section 2101A.2.2.

Section 2104A.4.2.1 Items 5 and 6 – These amendments are required to be consistent with Section 2101A.2.2.

Section 2104A.6 (Relocated from 2104A.6, 2001) – This section retains the requirements for grouted masonry from Section 2104A.6 of the 2001CBC. Part of the text is original 1997 UBC language that is required to make the 2001 CBC amendments meaningful. This change simply moves current standards, which are not addressed by model code, to a new section of the code to be consistent with the IBC format.

Section 2104A.7 (Relocated from 2104A.7, CBC 2001) – This section retains the prohibition on use of aluminum equipment for handling grout from Section 2104A.7 of the 2001 CBC. This is original 1997 UBC language that is not addressed by model code. This change simply moves current standards, which are not addressed by model code, to a new section of the code to be consistent with the IBC format.

Section 2105A.2.1 (Relocated from 2105A.3.0, CBC 2001) – This section retains the limitations on design compressive strength of masonry and associated test requirements from Section 2105A.3.0 of the 2001 CBC. This change simply moves current standards, which are not addressed by model code, to a new section of the code to be consistent with the IBC format. Also, requirement for AAC masonry, which is not permitted in DSA-SS regulated facilities, is deleted.

Section 2105A.2.2 – The applicability of the section is clarified to accommodate limitations in Section 2105A.2.1.

Section 2105A.2.2.1.3 – Requirements for AAC masonry, which are not permitted in DSA-SS regulated facilities, is deleted.

Section 2105A.2.2.1 – Requirements for using prism test method is clarified.

Section 2105A.2.2.2.2 (Relocated from 2105A.3 Item 2, CBC 2001) – This section retains the requirement for masonry prism testing from Section 2105A.3 Item 2 of the 2001 CBC. Part of the text is original 1997 UBC language. This change simply moves current standard, which is not addressed by model code, to a new section of the code to be consistent with the IBC format.

Section 2105A.2.2.3 (Relocated from 2105A.3.3, CBC 2001) – This section retains the requirement for compressive design strength verifications by masonry prism test record from Section 2105A.3.3 of the 2001 CBC. Part of the text is

original 1997 UBC language. This change simply moves current standard, which is not addressed by model code, to a new section of the code to be consistent with the IBC format.

Section 2105A.3 – The applicability of this section is clarified to accommodate the requirements of Sections 2105A.4 and 2105A.5.

Section 2105A.4 (Relocated from 2105A.3.1, CBC 2001) – This section retains the requirement for masonry core testing from Section 2105A.3.1 of the 2001 CBC. This change simply moves current standard, which is not addressed by model code, to a new section of the code to be consistent with the IBC format.

Section 2105A.5 (Relocated from 2105A.3.4 Item 2, CBC 2001) – This section retains the requirements for mortar and grout testing from Section 2105A.3.4 Item 2 of the 2001 CBC. This change simply moves current standards, which are not addressed by model code, to a new section of the code to be consistent with the IBC format.

Text changes are necessary because ASTM C 1586, rather than C 109, is the appropriate national standard for field quality assurance testing of mortar, including preconstruction and construction evaluation of mortar properties (references ASTM C 780 for testing procedures). Note that the U.B.C. Standard 21-16 is contained only in Volume 3 of the 1997 Uniform Building Code, and is not continued in the 2006 International Building Code. DSA also understands that this ICBO standard will not be published elsewhere by the ICC. This renders it unavailable for adoption by reference by DSA-SS.

The proposed repeal of provisions regarding sampling and handling duplicate and conflict with the requirements contained in the referenced standards (C 1586 and C 1019).

Section 2106A.1.1.1 – Ordinary plain prestressed masonry shear wall are not permitted per ASCE 7 Table 12.2-1 in Seismic Design Categories D, E and F. All DSA-SS regulated facilities are in one of these categories. Amendment is required to ensure consistency with ASCE 7 for DSA-SS regulated facilities.

Section 2106A.1.1.2 – Intermediate prestressed masonry shear wall are not permitted per ASCE 7 Table 12.2-1 in Seismic Design Categories D, E and F. All DSA-SS regulated facilities are in one of these categories. Amendment is required to ensure consistency with ASCE 7 for DSA-SS regulated facilities.

Section 2106A.1.1.3 – Special prestressed masonry shear wall are not permitted per ASCE 7 Table 12.2-1 in Seismic Design Categories D, E and F. All DSA-SS regulated facilities are in one of these categories. Amendment is required to ensure consistency with ASCE 7 for DSA-SS regulated facilities.

Section 2106A.5.3.1 (Relocated from 2106A.1.12.4 and 2104A.8, CBC 2001) – This section retains the requirements for minimum reinforcement in masonry walls from Sections 2104A.8 and 2106A.1.12.4 of the 2001 CBC. This change simply moves current standards, which are not addressed by model code, to a new section of the code to be consistent with the IBC format.

Section 2106A.5.3.2 (Relocated from 2106A.1.12.4, CBC 2001) – This section retains the requirements for minimum reinforcement in masonry columns from Section 2106A.1.12.4 of the 2001 CBC. This change simply moves current standards, which are not addressed by model code, to a new section of the code to be consistent with the IBC format.

Section 2106A.5.4 (Relocated from 2106A.1.7, CBC 2001) – This section retains the requirement for lateral support of masonry from Section 2106A.1.7 of the 2001 CBC. Part of the text is original 1997 UBC language. This change simply moves current standard, which is not addressed by model code, to a new section of the code to be consistent with the IBC format.

Section 2107A.1.1 (Relocated from 2107A.1.4, CBC 2001) – Masonry design assumptions for allowable stress design have been retained from Section 2107A.1.4 of the 2001 CBC. This will prevent misuse of design requirements beyond their intended scope. Some of the text is original 1997 UBC model code text. This change simply moves current standards, which are not addressed by model code, to a new section of the code to be consistent with the IBC format.

Deletion of Model Code Section 2107A.4 IBC 2006 – The requirements for Seismic Design Categories A, B and C are deleted since DSA-SS regulated facilities must comply with the requirements for Seismic Design Categories D

(minimum) per Section 1613A.

Section 2107A.4 (Relocated from 2107A.1.5.3, CBC 2001) – This section retains the requirement for adjustment of anchor bolt capacities for edge distance and spacing from Section 2107A.1.5.3 of the 2001 CBC. Part of the text is original 1997 UBC language. This change simply moves current standard, which is not addressed by model code, to a new section of the code to be consistent with the IBC format.

Section 2107A.5 (Relocated from 2106A.2.14.1, CBC 2001) – This section retains the requirement for anchor bolt size and materials from Section 2106A.2.14.1 of the 2001 CBC. This change simply moves current standard, which is not addressed by model code, to a new section of the code to be consistent with the IBC format.

Section 2107A.6 (Relocated from 2106A.2.7, CBC 2001) – This section retains the requirement for anchoring walls and columns and requirements for bearing of concentrated load on walls from Section 2106A.2.7 of the 2001 CBC. This change simply moves current standard, which is not addressed by model code, to a new section of the code to be consistent with the IBC format.

Section 2107A.9 (Relocated from 2106A.2.3.3, and Table 21A-R, CBC 2001) – This section retains the requirement for minimum thickness of masonry walls from Section 2106A.2.3.3 and Table 21A-R of the 2001 CBC. This change simply moves current standard, which is not addressed by model code, to a new section of the code to be consistent with the IBC format.

Section 2107A.2.10 (Relocated from 2107A.3, CBC 2001) – This section retains the practice of not permitting unreinforced masonry in DSA-SS regulated facilities from Section 2107A.3 of the 2001CBC. This change simply moves current standard, which is not addressed by model code, to a new section of the code to be consistent with the IBC format.

Section 2107A.12 – The requirement for maximum reinforcement ratio is simplified and expanded to all reinforced masonry components for public schools and continued operation occupancy structures in Seismic Design Category D, E and F facilities.

Section 2108A.1 (Exception) – This amendment is required to be consistent with Section 2101A.2.2.

Section 2108A.2 (Relocated from 2107A.3, CBC 2001) – This section retains the practice of not permitting unreinforced masonry in DSA-SS regulated facilities from Section 2107A.3 of the 2001 CBC. This change simply moves current standard, which is not addressed by model code, to a new section of the code to be consistent with the IBC format.

Section 2108A.5 – This amendment is required to be consistent with Section 2106A.1.1.3.

Section 2109A (Relocated from 2109A, CBC 2001) – Section 2909.1.1 of the IBC prohibits use of empirical design in Seismic Design Categories D, E and F. This prohibition is consistent with requirements of Section 2109A of the 2001 CBC. Prohibited text is deleted from the amended Chapter 21A. Amendment simply deletes design requirements that are not permitted by DSA-SS.

Section 2110A.1 (Relocated from 2110A.1, CBC 2001) – This section retains the restriction on use of glass unit masonry for non-structural non-bearing walls only from Section 2110A.1 of the 2001 CBC. Part of the text is 1997 UBC language carried forward as an amendment. This change simply moves current standard to a new section of the code to be consistent with the IBC format.

Section 2111A.3 – The requirements for Seismic Design Categories A, B and C are deleted since they are not permitted by DSA-SS per Section 1613A.

Section 2113A.5 (Relocated from 2104A.4.5, CBC 2001) – The requirements for corbelling defined in Section 2104A.2 are referenced to make all corbels design consistent. This will also make all corbel design consistent with requirements from Section 2104A.4.5 of the 2001CBC.

Section 2113A.11.1.2 – This section refers to the International Fuel Gas Code for flue lining systems. DSA-SS is proposing to replace the reference to the International Fuel Gas Code with the California Mechanical Code. The

California Mechanical Code is based on Uniform Mechanical Code. The amendment is necessary to ensure that the statutory code is properly referenced and to ensure changes to the Uniform Mechanical Code proposed by DSA-SS are applied and enforced. Without this amendment, the non-amended International Fuel Gas Code would apply.

Section 2113A.15 (Exception) – This section refers to the International Fuel Gas Code for Flue lining systems. DSA-SS is proposing to replace the reference to the International Fuel Gas Code with the California Mechanical Code. California Mechanical Code is based on Uniform Mechanical Code. The amendment is necessary to ensure that the statutory code is properly referenced and to ensure changes to the Uniform Mechanical Code proposed by DSA-SS are applied and enforced. Without this amendment, the non-amended International Fuel Gas Code would apply.

Section 2114A (Relocated from 2112A, CBC 2001) – This section retains the requirements for masonry non-bearing walls from Section 2112A of the 2001 CBC. This change simply moves current standard, which is not addressed by model code, to a new section of the code to be consistent with the IBC format.

Section 2115A (Relocated from 2113A, CBC 2001) – This section retains the requirements for masonry screen walls from Section 2113A of the 2001 CBC. This change simply moves current standards, which are not addressed by model code, to a new section of the code to be consistent with the IBC format.

The specific purpose and rationale for the amendments in 2007 CBC Chapters 22A provisions:

CHAPTER 22A
STEEL

REPEAL OF EXISTING CALIFORNIA AMENDMENTS IN PART OR IN WHOLE THAT ARE NO LONGER NECESSARY:

The 2006 IBC uses referenced standards for design and materials requirements with amendments rather than incorporating them into the building codes as was done in the 2001 CBC, which is based on the 1997 UBC. Since two code cycles (2000 & 2003) have passed between the 1997 UBC and the 2006 IBC, some of the design concepts and philosophies contained in the 2001 CBC have become obsolete or irrelevant. Repeal of California amendments for those sections where the 2001 CBC design concepts or philosophies become obsolete or irrelevant are not addressed explicitly.

Amendments contained in the 2001 CBC are repealed except those shown in the Express Terms. Where an entire amendment in a section or subsection is repealed it is shown as stricken through the section or subsection numbers. When amendments are carried forward, the amended language is shown in the express terms and part of the text that is repealed is shown in strike-out. The first column of the adoption matrix shows which amendments are carried forward. The second column shows where the amendment has been relocated to (by section). Any modifications to amendments being carried forward are indicated and purpose and rationale stated. Amendments that are relocated from existing Chapter 22A to a chapter other than Chapter 22A are shown in the relocated Chapters.

Section 2201A.1 – The scope is revised by adding Sections 2201A.1.1 and 2201A.1.2 to clarify application of Chapter 22A to DSA-SS regulated facilities. Chapter 22A is based on Chapter 22 of the 2006 IBC. To accommodate substantial number of amendments for immediate occupancy structures in moderate to high seismic areas, amended Chapter 22A was created.

Section 2204A.1.1 (Relocated from 2205A.10.2, CBC 2001) – This section retains the prohibition on adding welded splice unless shown on approved plans from Section 2205A.10.2 of the 2001 CBC. This change simply moves current standard, which is not addressed by model code, to a new section of the code to be consistent with the IBC format.

Section 2204A.1.2 (Relocated from 2205A.13, CBC 2001) – This section retains the requirements for using reduced shear strength for welded shear connector to transfer loads except for composite action from Section 2205A.13 of the 2001 CBC. Changes in the section are necessary to make the section consistent with new format of AISC 360. Also, requirement is clarified by permitting higher allowable strength when design force includes over strength factor or strength is justified by test data. This change simply moves current standards, which are not addressed by model code, to a new section of the code to be consistent with the IBC format.

individual sites can take advantage of all three factors instead of relying on seismic zones as in the 2001 CBC.

2) Component design forces will be smaller at higher elevations in the building because of reduction in rate of increase of spectral acceleration with height provided in ASCE 7 Chapter 13. This change along with reduction in base shear can reduce component design forces significantly.

3) Non-building structures are permitted to be non-ductile and non-redundant when designed for higher base shear. This may reduce the detailing cost in some cases.

4) Construction detailing requirements in materials standards will be more or less equivalent to the 2001 CBC requirements.

5) Inspection and testing requirements in the new code will be somewhat more stringent than what is required in the 2001 CBC.

6) Construction documentation requirements are more clearly defined in the 2006 model code; this may require some additional effort during preparation of construction documents for some projects.

DUPLICATION OR CONFLICTS WITH FEDERAL REGULATIONS

(Government Code Section 113465.2(b)(5) requires a department, board, or commission within the Environmental Protection Agency, the Resources Agency, or the Office of the State Fire Marshal to describe its efforts, in connection with a proposed rulemaking action, to avoid unnecessary duplication or conflicts with federal regulations contained in the Code of Federal Regulations addressing the same issues. These agencies may adopt regulations different from these federal regulations upon a finding of one or more of the following justifications: (A) The differing state regulations are authorized by law and/or (B) The cost of differing state regulations is justified by the benefit to human health, public safety, public welfare, or the environment. It is not the intent of this paragraph to require the agency to artificially construct alternatives or to justify why it has not identified alternatives.)

These regulations do not duplicate or conflict with Federal Regulations.

MANDATE ON LOCAL AGENCIES OR SCHOOL DISTRICTS.

(Pursuant to Government Code Section 11346.9(a) (2), if the determination as to whether the proposed action would impose a mandate, the agency shall state whether the mandate is reimbursable pursuant to Part 7 of Division 4. If the agency finds that the mandate is not reimbursable, it shall state the reasons for the finding(s).)

The Division of the State Architect has determined that the proposed regulatory action does not impose a mandate on local agencies or school districts.

OBJECTIONS OR RECOMMENDATIONS MADE REGARDING THE PROPOSED REGULATION(S).

(Government Code Section 11346.9(a) (3))

45 DAY PUBLIC COMMENT PERIOD - COMMENTS RECEIVED BY DSA-SS:

Comment #1 - DSA-SS 02/06 Ware - Sections 1408.2 and 1408.2.1

Commenter: David Ware, Owens Corning

Mr. Ware proposed revisions to existing amendments in Section 1408.2 and Section 1408.2.1 as follows, which would add new amendment text to 1408.2 and repeal existing amendment text in 1408.2.1 (proposed revisions are indicated in double underline and double strike-out format):

Section 1408.2 Adhered Veneer. Units of tile, masonry, stone or terra cotta which exceed 5/8" (16 mm) in thickness and are greater than 15 psf shall be applied as for anchored veneer where used over exitways or more than 20 feet in height above adjacent ground elevation.

Commenter's Reason: The rationale for this comment regarding *1408.2* is non-confomance with criteria #4 and #6 of the nine-point criteria. The existing amendment arbitrarily limits types of units based on size rather than structural integrity or weight. The applicable referenced standard ACI 530 limits the weight of adhered units to 15 psf.

Section 1408.2.1 Bond Strength and Tests. Veneer shall develop a bond to the ~~supporting element~~ backing ~~of sufficient strength to provide a working shear stress of 50 psi (690 kPa)~~ in accordance with ACI 530, Section 6.3.2.4.

~~Not less than two shear tests shall be performed for the adhered veneer between the units and the supporting~~

~~element. At least one shear test shall be performed at each building for each 5,000 square foot (465 m^2) of floor area or fraction thereof.~~

Commenter's Reason: The rationale for this comment regarding *1408.2.1* is non-conformance with criteria #6 and #7 of the nine-point criteria. Using building size criteria to determine the number of test samples is arbitrary, and should be based on surface area of veneer. Also, there is no reference given to a nationally recognized in-field test procedure.

DSA Response:

These public comments do not address DSA's proposed modifications to the existing amendments. At this time, DSA-SS can not propose substantive modifications to the existing amendment as requested, as Government Code §11346.45 requires the proposing state agency to include all parties affected by a proposed code change during the code change development process, which concluded in May 2006. DSA/SS will take this comment under consideration during a subsequent rulemaking cycle.

In the interim, DSA will develop a written interpretation, as authorized by Education Code §17308 (d), which clarifies the intent of the regulations and addresses the expressed concerns to the extent possible. DSA currently recognizes ASTM C 482 *Standard Test Method for Bond Strength of Ceramic Tile to Portland Cement Paste* as an accepted laboratory test method of field-prepared mockups. DSA has not experienced any significant problems with the use of this standard, other than with the test load criteria prescribed in the 2001 CBC (100 psi minimum bond strength), which is being revised to 50 psi to align with the criteria in the referenced standard ACI 530.

Comment #2 - DSA-SS 02/06 Cherrier - Section 1704A.1

Commenter: Robert Cherrier, BSK Associates Inc.

Mr. Cherrier proposed revisions to Section 1704A.1 as follows, which would repeal model code text and add new amendment text regarding employment and qualification criteria of the project testing and inspection agency (proposed revisions are indicated in double underline and double strike-out format):

1704*A*.1 General. Where application is made for construction as described in this section, ~~the owner or the registered design professional in responsible charge acting as the owner's agent shall employ one or more special inspectors to provide inspections during construction on the types of work listed under Section 1704A. The special inspector shall be a qualified person who shall demonstrate competence, to the satisfaction of the building official,~~ *the school district shall employ an approved testing and inspection firm. The approved firm must meet ASTM A329 including the requirement of a professional engineer with five years of material testing and inspection experience. The Quality Control Plan of the approved firm must ensure that only qualified inspectors are used.* for inspection of the particular type of construction or operation requiring special inspection.

Commenter's Reason: The rationale for this comment regarding Section 1704A.1 is non-conformance with criteria #3 (public interest) of nine-point criteria. Often the agents of the school district are basing consultant selection on price only. The Field Act requires that public schools should be built to a higher standard. Therefore consultant selection should continue to be performed by the districts that are ensuring that a qualification based selection criteria is applied. The only way to ensure that the inspections are of the highest quality is to select an approved agency that subjects inspectors to the professional engineering supervision and control of a firm that meets ASTM E 329.

DSA Response:

This public comment does not address DSA's proposed modifications to the model code language (Section 1704.1 of the 2006 edition *International Building Code*). At this time, DSA-SS can not propose substantive modifications to the model code text as requested, as Government Code §11346.45 requires the proposing state agency to include all parties affected by a proposed code change during the code change development process, which concluded in May 2006. DSA/SS will take this comment under consideration during a subsequent rulemaking cycle.

It should be noted that DSA has proposed a 15-day modification to Section 1704A.1 as follows (15 day modifications are indicated in double underline and double strike-out format):

1704*A*.1 General. Where application is made for construction as described in this section, the owner ~~or the registered design professional in responsible charge acting as the owner's agent~~ shall employ one or more special inspectors to provide inspections during construction on the types of work listed under Section 1704*A*. …

Rationale: The purpose of the 15 day modification is to align Section 1704A.1 with Title 24, Part 1 requirements regarding special inspection. Title 24, Part 1, Section 4-333 (b) does not provide for employment of special

inspectors by the design professional in responsible charge, and requires that the costs for special inspection be paid by the school board.

Comment #3 - DSA-SS 02/06 Cherrier - Section 1704A.3.1.1

Commenter: Robert Cherrier, BSK Associates Inc.

Mr. Cherrier proposed revisions to Section 1704A.3.1.1 as follows, which would repeal existing amendment text prescribing qualification criteria for welding inspectors (proposed revisions are indicated in double underline and double strike-out format):

1704A.3.1.1 Inspection of Welding.

...

~~*The minimum requirements for a qualified welding inspector shall be as those for an AWS certified welding inspector (CWI), as defined in the provisions of the AWS QC1 -1-96, Standard for AWS Certification of Welding Inspectors published by the American Welding Society. All welding inspectors shall be as approved by the enforcement agency.*~~ *The qualified welding inspector shall possess certification from a recognized organization such as ICC, AWS, or the Canadian Welding Bureau or equal. The inspector shall be an employee of the approved project testing and inspection firm.*

...

Commenter's Reason: The rationale for this comment regarding Section 1704A.3.1.1 is non-conformance with criteria #4 (arbitrary, unreasonable, capricious) of nine-point criteria. The State of California should not be endorsing one certification body over another in the building codes. Many other organizations such as ICC provide welding inspection certification program that meets or exceeds the one developed by AWS. For example, the ICC certification includes a test on the building code while AWS does not. The inspector should be subject to the supervision and oversight of a professional engineer as required by ASTM E 329. The only way to ensure this important life safety issue is enforced is by having the welding inspector employed by the approved testing and inspection firm assigned to the project.

DSA Response:

This public comment does not address DSA's proposed modifications to the existing amendment. At this time, DSA-SS can not propose substantive modifications to the existing amendment as requested, as Government Code §11346.45 requires the proposing state agency to include all parties affected by a proposed code change during the code change development process, which concluded in May 2006. DSA/SS will take this comment under consideration during a subsequent rulemaking cycle.

Comment #4 - DSA-SS 02/06 Cherrier - Section 1704A.3.1.1

Commenter: Robert Cherrier, BSK Associates Inc.

Mr. Cherrier proposed revisions to Section 1704A.3.1.1 as follows, which would repeal existing amendment text regarding methods of inspection/testing by the welding inspector (proposed revisions are indicated in double underline and double strike-out format):

1704A.3.1.1 Inspection of Welding.

...

~~*The inspector shall use all means necessary to determine the quality of the weld. The inspector may use gamma ray, magnaflux, trepanning, sonics or any other aid to visual inspection which the inspector may deem necessary to be assured of the adequacy of the welding.*~~

Commenter's Reason: The rationale for this comment regarding Section 1704A.3.1.1 is non-conformance with criteria #6 (ambiguous or vaugue, in whole or part) of nine-point criteria. "All means necessary" could have multiple interpretations and is completely arbitrary. The present code is not meant to be prescriptive about means and methods of completion. The non-destructive testing mentioned is under the complete control of the laboratory professional engineer and it is his or her determination if adequate testing has been performed. The means and methods of the welding inspection is assured by having the inspector work for an approved testing and inspection firm with the oversight and Quality Control Plans required by ASTM E 329.

DSA Response:

This public comment does not address DSA's proposed modifications to the existing amendment. At this time, DSA-

SS can not propose substantive modifications to the existing amendment as requested, as Government Code §11346.45 requires the proposing state agency to include all parties affected by a proposed code change during the code change development process, which concluded in May 2006. DSA/SS will take this comment under consideration during a subsequent rulemaking cycle.

Comment #5 - DSA-SS 02/06 C. Craig - Section 1704A.3.1.1

Commenter: Clifford Craig, Dynamic Consultants, Inc.

Mr. Craig proposed revisions to Section 1704A.3.1.1 as follows, which would repeal existing amendment text prescribing qualification criteria for welding inspectors (proposed revisions are indicated in double underline and double strike-out format):

1704A.3.1.1 Inspection of Welding.

...

~~*The minimum requirements for a qualified welding inspector shall be as those for an AWS certified welding inspector (CWI), as defined in the provisions of the AWS QC1 -1-96, Standard for AWS Certification of Welding Inspectors published by the American Welding Society. All welding inspectors shall be as approved by the enforcement agency.*~~

Commenter's Reason: The rationale for this comment regarding Section 1704A.3.1.1 is non-conformance with criteria #4 (arbitrary, unreasonable, capricious) of nine-point criteria. The qualifications of the special inspector have been previously and adequately identified in section 1704A.1 and 1704A.3.1. It is not appropriate to set a minimum standard using a specific certification such as AWS-CWI. While there are other acceptable certification programs that can meet the criteria, it is not appropriate to set a minimum standard for qualifications of a special inspector in the code. It is more appropriate to let the code enforcement agency determine the qualifications needed to meet the evolving standard of practice.

The State of California should not be endorsing one certification body over another in the building codes. Even ASTM is abandoning this practice, due to the successful claims that it gives an unfair and unreasonable advantage to one or few organizations. ASTM is returning to using more generalized guidelines to define specific personnel qualification requirements. I would also submit that the supervising PE of an inspection agency should be allowed to determine the qualification of the special inspector under his/her supervision.

DSA Response:

This public comment does not address DSA's proposed modifications to the existing amendment. At this time, DSA-SS can not propose substantive modifications to the existing amendment as requested, as Government Code §11346.45 requires the proposing state agency to include all parties affected by a proposed code change during the code change development process, which concluded in May 2006. DSA/SS will take this comment under consideration during a subsequent rulemaking cycle.

Comment #6 - DSA-SS 02/06 C. Craig - Section 1704A.3.1.1

Commenter: Clifford Craig, Dynamic Consultants, Inc.

Mr. Craig proposed revisions to Section 1704A.3.1.1 as follows, which would repeal existing amendment text prescribing methods of inspection/testing by the welding inspector (proposed revisions are indicated in double underline and double strike-out format):

1704A.3.1.1 Inspection of Welding.

...

~~*The inspector shall use all means necessary to determine the quality of the weld. The inspector may use gamma ray, magnaflux, trepanning, sonics or any other aid to visual inspection which the inspector may deem necessary to be assured of the adequacy of the welding.*~~

Commenter's Reason: The rationale for this comment regarding Section 1704A.3.1.1 is non-conformance with criteria #1 (conflict, overlap or duplication of other building standards) of nine-point criteria. The interpretation of "all means necessary" has always been difficult for the special inspector to determine and is now appropriately covered in Section 1705A.2.3. This section states "the registered design professional in responsible charge shall identify the type and extent of each type of special inspection and each test." This is where the responsibility should be and is consistent with the practice presently used in the city and county jurisdictions throughout California.

DSA Response:

This public comment does not address DSA's proposed modifications to the existing amendment. At this time, DSA-SS can not propose substantive modifications to the existing amendment as requested, as Government Code §11346.45 requires the proposing state agency to include all parties affected by a proposed code change during the code change development process, which concluded in May 2006. DSA/SS will take this comment under consideration during a subsequent rulemaking cycle.

Comment #7 - DSA-SS 02/06 M. Craig - Section 1704A.3.1.1

Commenter: Michelle Craig, Dynamic Consultants, Inc.

Ms. Craig proposed revisions to Section 1704A.3.1.1 as follows, which would repeal existing amendment text prescribing qualification criteria for welding inspectors (proposed revisions are indicated in double underline and double strike-out format):

1704A.3.1.1 Inspection of Welding.

...

~~*The minimum requirements for a qualified welding inspector shall be as those for an AWS certified welding inspector (CWI), as defined in the provisions of the AWS QC1 –1-96, Standard for AWS Certification of Welding Inspectors published by the American Welding Society. All welding inspectors shall be as approved by the enforcement agency.*~~

Commenter's Reason: The minimum qualification for a welding inspector has previously been addressed in two locations in the code - Sections 1704A.1 and 1704A.3.1. It is inappropriate for any building code to promote a specific certification when multiple programs are not only available, but also appropriate for demonstrating a minimum level of competence. None of the other code provisions pertaining to special inspection identify a specific certification program as a means of establishing competence. The method is appropriately left to the determination of the code enforcement official. These sentences are an unnecessary expansion of the previously noted requirements for demonstrating competence, and needlessly restrictive as presented.

DSA Response:

This public comment does not address DSA's proposed modifications to the existing amendment. At this time, DSA-SS can not propose substantive modifications to the existing amendment as requested, as Government Code §11346.45 requires the proposing state agency to include all parties affected by a proposed code change during the code change development process, which concluded in May 2006. DSA/SS will take this comment under consideration during a subsequent rulemaking cycle.

Comment #8 - DSA-SS 02/06 Cherrier - Sections 1701A.5 and 1704A.1.2

Commenter: Robert Cherrier, BSK Associates Inc.

Mr. Cherrier proposed revisions to Section 1701A.5 and Section 1704A.1.2 to change the term "inspector of record" to "project inspector" as follows (proposed revisions are indicated in double underline and double strike-out format):

1701A.5 (Relocated from 1701A.1.1, CBC 2001) [For DSA-SS] In addition to the project inspector ~~inspector(s) of record~~ project inspector required by Title 24, Part 1, Section 4-333, ...

1704A.1.2 Report requirement. *(Relocated from 1701A.3.2, CBC 2001) The ~~inspector(s) of record~~ project inspector and ~~Special~~ special* inspectors shall keep records of inspections. The *~~inspector of record~~ project inspector and* special inspector shall furnish inspection reports...

Commenter's Reason: The rationale for these comments regarding Sections 1701A.5 and 1704A.1.2 is non-conformance with criteria #1 (conflict, overlap or duplication of other building standards) of nine-point criteria. Title 24, Part 1 (Administrative Code), refers to (in multiple locations) the on-site inspector for DSA projects as the "project inspector." The introduction of a new term "inspector of record" will cause confusion with other inspectors such as the special inspector.

DSA Response:

DSA concurs with the comment, and has proposed modifications to Section 1701A.5 and Section 1704A.1.2 in the 15 day public comment period as follows (15 day modifications are indicated in double underline and double strike-out format):

1701A.5 (Relocated from 1701A.1.1, CBC 2001) [DSA-SS] In addition to the project inspector ~~inspector(s) of record~~

required by Title 24, Part 1, Section 4-333, ...

Rationale: Section 1701A.5 - This change is necessary to provide consistency with Title 24 Part 1, (Sec. 4-333(b), 4-342), which uses the term "project inspector" instead of "inspector of record."

1704A.1.2 Report requirement. *(Relocated from 1701A.3.2, CBC 2001) The inspector(s) of record and* ~~Special~~ *special* inspectors shall keep records of inspections. The *inspector of record and* special inspector shall furnish inspection reports...

***Exception**: [DSA-SS] The term "inspector of record" is synonymous with "project inspector".*

Rationale: Section 1704A.1.2 - This change is necessary to provide consistency with Section 1701A.5 and Title 24, Part 1, Section 4-333 (b) and 4-342, which uses the term "project inspector" instead of "inspector of record." DSA is proposing the use of an "exception", as OSHPD also adopts this code section and they use the term "inspector of record."

Comment #9 - DSA-SS 02/06 Cherrier - Section 1701A.5

Commenter: Robert Cherrier, BSK Associates Inc.

Mr. Cherrier proposed revisions to Section 1701A.5 as follows, which would modify proposed amendment text regarding employment of special inspectors (proposed revisions are indicated in double underline and double strike-out format):

1701A.5 (Relocated from 1701A.1.1, CBC 2001) [For DSA-SS] In addition to the ~~project inspector~~ inspector(s) of record required by Title 24, Part 1, Section 4-333, the ~~school district owner or the registered design professional in responsible charge acting as the owner's agent shall employ one or more special inspectors~~ school district shall employ an approved testing and inspection firm who shall provide inspections during construction on the types of work listed under Chapters 17A, 18A, 19A, 20, 21A, 22A, 23, 25, 34, and noted in the special test, inspection and observation plan required by Sections 4-335 of Title 24, Part 1, of the California Building Standards Administrative Code.

Commenter's Reason: The rationale for this comment regarding Section 1701A.5 is non-conformance with criteria #3 (public interest) of nine-point criteria. Often the agents of the school district are basing consultant selection on price only. The Field Act requires that public schools should be built to a higher standard. Therefore consultant selection should continue to be performed by the districts that are ensuring that a qualification based selection criteria is applied. The only way to ensure that the inspections are of the highest quality is to select an approved agency that subjects inspectors to the professional engineering supervision and control of a firm that meets ASTM E 329.

DSA Response:

This public comment does not address DSA's proposed modifications to the existing amendment (Section 1701A.5). At this time, DSA-SS can not propose substantive modifications to the amendment as requested, as Government Code §11346.45 requires the proposing state agency to include all parties affected by a proposed code change during the code change development process, which concluded in May 2006. DSA/SS will take this comment under consideration during a subsequent rulemaking cycle.

It should be noted that DSA has proposed modifications to Section 1701A.5 in the 15 day public comment period as follows (15 day modifications are indicated in double underline and double strike-out format):

1701A.5 (Relocated from 1701A.1.1, CBC 2001) [DSA-SS] In addition to the project inspector ~~inspector(s) of record~~ required by Title 24, Part 1, Section 4-333, the ~~school district~~ owner ~~or the registered design professional in responsible charge acting as the owner's agent~~ shall employ one or more special inspectors who shall provide inspections during construction on the types of work listed under Chapters 17A, 18A, 19A, 20, 21A, 22A, 23, 25, 34, and noted in the special test, inspection and observation plan required by Sections 4-335 of Title 24, Part 1, of the California Building Standards Administrative Code.

Rationale: Section 1701A.5 - This change is necessary to provide consistency with Title 24 Part 1, (Sec. 4-333(b), 4-342), which uses the term "project inspector" instead of "inspector of record." Title 24, Part 1, (Section 4-333 (b)) does not provide for employment of special inspectors by the design professional in responsible charge, and requires that the costs for special inspection be paid by the school board.

Comment #10 - DSA-SS 02/06 McDonnell - Sections 1701A.5 and 1704A.1.2

Commenter: Martha McDonnell, Youngdahl Consulting Group, Inc.

Ms. McDonnell proposed revisions to Section 1701A.5 and Section 1704A.1.2 to change the term "inspector of record" to "project inspector" as follows (proposed revisions are indicated in double underline and double strike-out format):

1701A.5 (Relocated from 1701A.1.1, CBC 2001) [For DSA-SS] In addition to the project inspector ~~inspector(s) of record~~ project inspector required by Title 24, Part 1, Section 4-333, …

1704A.1.2 Report requirement. *(Relocated from 1701A.3.2, CBC 2001) The ~~inspector(s) of record~~ project inspector and ~~Special~~ special* inspectors shall keep records of inspections. The *~~inspector of record~~ project inspector and* special inspector shall furnish inspection reports…

Commenter's Reason: The rationale for these comments regarding Sections 1701A.5 and 1704A.1.2 is non-conformance with criteria #1 (conflict, overlap or duplication of other building standards) of nine-point criteria. Title 24, Part 1 (Administrative Code), refers to (in multiple locations) the on-site inspector for DSA projects as the "project inspector." The introduction of a new term "inspector of record" will cause confusion with other inspectors such as the special inspector.

DSA Response:

DSA concurs with the comment, and has proposed modifications to Section 1701A.5 and Section 1704A.1.2 in the 15 day public comment period as follows (15 day modifications are indicated in double underline and double strike-out format):

1701A.5 (Relocated from 1701A.1.1, CBC 2001) [DSA-SS] In addition to the project inspector ~~inspector(s) of record~~ required by Title 24, Part 1, Section 4-333, …

Rationale: Section 1701A.5 - This change is necessary to provide consistency with Title 24 Part 1, (Sec. 4-333(b), 4-342), which uses the term "project inspector" instead of "inspector of record."

1704A.1.2 Report requirement. *(Relocated from 1701A.3.2, CBC 2001) The inspector(s) of record and ~~Special~~ special* inspectors shall keep records of inspections. The *inspector of record and* special inspector shall furnish inspection reports…

***Exception**: [DSA-SS] The term "inspector of record" is synonymous with "project inspector".*

Rationale: Section 1704A.1.2 - This change is necessary to provide consistency with Section 1701A.5 and Title 24, Part 1, Section 4-333 (b) and 4-342, which uses the term "project inspector" instead of "inspector of record." DSA is proposing the use of an "exception", as OSHPD also adopts this code section and they use the term "inspector of record."

Comment #11 - DSA-SS 02/06 McDonnell - Section 1701A.5

Commenter: Martha McDonnell, Youngdahl Consulting Group, Inc.

Ms. McDonnell proposed revisions to Section 1701A.5 as follows, which would modify proposed amendment text regarding employment of special inspectors (proposed revisions are indicated in double underline and double strike-out format):

1701A.5 (Relocated from 1701A.1.1, CBC 2001) [For DSA-SS] In addition to the ~~project inspector~~ inspector(s) of record required by Title 24, Part 1, Section 4-333, the ~~school district owner or the registered design professional in responsible charge acting as the owner's agent shall employ one or more special inspectors~~ school district shall employ an approved testing and inspection firm who shall provide inspections during construction on the types of work listed under Chapters 17A, 18A, 19A, 20, 21A, 22A, 23, 25, 34, and noted in the special test, inspection and observation plan required by Sections 4-335 of Title 24, Part 1, of the California Building Standards Administrative Code.

Commenter's Reason: The rationale for this comment regarding Section 1701A.5 is non-conformance with criteria #3 (public interest) of nine-point criteria. Often the agents of the school district are basing consultant selection on price only. The Field Act requires that public schools should be built to a higher standard. Therefore consultant selection

should continue to be performed by the districts that are ensuring that a qualification based selection criteria is applied. The only way to ensure that the inspections are of the highest quality is to select an approved agency that subjects inspectors to the professional engineering supervision and control of a firm that meets ASTM E 329.

DSA Response:

This public comment does not address DSA's proposed modifications to the existing amendment (Section 1701A.5). At this time, DSA-SS can not propose substantive modifications to the amendment as requested, as Government Code §11346.45 requires the proposing state agency to include all parties affected by a proposed code change during the code change development process, which concluded in May 2006. DSA/SS will take this comment under consideration during a subsequent rulemaking cycle.

It should be noted that DSA has proposed modifications to Section 1701A.5 in the 15 day public comment period as follows (15 day modifications are indicated in double underline and double strike-out format):

1701A.5 (Relocated from 1701A.1.1, CBC 2001) [DSA-SS] In addition to the project inspector ~~inspector(s) of record~~ required by Title 24, Part 1, Section 4-333, the ~~school district~~ owner ~~or the registered design professional in responsible charge acting as the owner's agent~~ shall employ one or more special inspectors who shall provide inspections during construction on the types of work listed under Chapters 17A, 18A, 19A, 20, 21A, 22A, 23, 25, 34, and noted in the special test, inspection and observation plan required by Sections 4-335 of Title 24, Part 1, of the California Building Standards Administrative Code.

Rationale: Section 1701A.5 - This change is necessary to provide consistency with Title 24 Part 1, (Sec. 4-333(b), 4-342), which uses the term "project inspector" instead of "inspector of record." Title 24, Part 1, (Section 4-333 (b)) does not provide for employment of special inspectors by the design professional in responsible charge, and requires that the costs for special inspection be paid by the school board.

Comment #12 - DSA-SS 02/06 Cherrier - Section 2105A.5

Commenter: Robert Cherrier, BSK Associates Inc.

Mr. Cherrier proposed revisions to Section 2105A.5 to change the referenced standard "ASTM C 109" to "UBC Historic Standard 21-16" as follows (proposed revisions are indicated in double underline and double strike-out format):

2105A.5 (Relocated from 2105A.3.4 Item #2, 2001 CBC) Mortar and grout tests.

...

Test specimens for mortar and grout shall be made as set forth in ~~UBC Standards 21-16 and 21-18~~ ~~ASTM C 109~~ UBC Historic Standard 21-16 and ASTM C 1019.

...

Note by commenter - An alternative would be to place directly in the section the language of UBC Standard 21-16. It is a very short standard.

Commenter's Reason: The rationale for this comment regarding Section 2105A.5 is non-conformance with criteria #6 (ambiguous or vague amendment text) of nine-point criteria. The referenced standard of ASTM C 109 is not applicable for sampling in field conditions. It is meant to be used under tightly controlled conditions of a laboratory. For example the specimens can only be molded between 68 and 79 degrees. This would preclude constructing any masonry except on days that meet that condition. In addition, specimens must be immediately put in a moist room and the flow of the mortar (another laboratory test) must be adjusted for each set. ASTM C 109 was never designed to be used in the field for any kind of contract compliance. UBC Standard 21-16 is the only workable field mortar test.

DSA Response:

DSA concurs with the comment, and has proposed modifications to Section 2105A.5 in the 15 day public comment period as follows (15 day modifications are indicated in double underline and double strike-out format):

2105A.5 (Relocated from 2105A.3.4 Item #2, 2001 CBC) Mortar and grout tests. These tests are to establish whether the masonry components meet the specified component strengths. At the beginning of all masonry work, at least one test sample of the mortar and grout shall be taken on three successive working days and at least at one-week intervals thereafter. ~~The samples shall be continuously stored in moist air until tested.~~ They shall meet the minimum strength requirement given in Sections ~~2103A.3 and 2103A.4~~ 2103A.8 and 2103A.12 for mortar and grout, respectively. Additional samples shall be taken whenever any change in materials or job conditions occur, or

whenever in the judgment of the architect, structural engineer or the enforcement agency such tests are necessary to determine the quality of the material.

Test specimens for mortar and grout shall be made as set forth in ~~UBC Standards 21-16 and 21-18~~ ASTM C ~~109~~ 1586 and ASTM C 1019. ~~In making the mortar test specimens, the mortar shall be taken from the unit soon after spreading. After molding, the molds shall be carefully protected by a covering which shall be kept damp for at least 24 hours, after which the specimens shall be stored and tested as required for concrete cylinders.~~

~~In making grout test specimens, the masonry unit molds shall be broken away after the grout has taken its set, but before it has hardened. If an absorbent paper liner is used, the mold may be left in place until the specimen has hardened. The prisms shall be stored as required for concrete cylinders. They shall be tested in the vertical position.~~

Rationale: ASTM C 1586, rather than C 109, is the appropriate national standard for field quality assurance testing of mortar, including preconstruction and construction evaluation of mortar properties (references ASTM C 780 for testing procedures). Note that the U.B.C. Standard 21-16 is contained only in Volume 3 of the 1997 Uniform Building Code, and is not continued in the 2006 International Building Code. DSA also understands that this ICBO standard has not been published elsewhere by the ICC, rendering it unavailable for adoption by DSA-SS.

The proposed repeal of provisions regarding sampling and handling is based on duplication and conflict with the requirements contained in the referenced standards (C 1586 and C 1019).

This change addresses comments by Mr. Robert D. Cherrier of BSK associates, inc. during the 45-day comment period.

15 DAY PUBLIC COMMENT PERIOD - COMMENTS RECEIVED BY DSA-SS:

Note: The following five (5) comments were received during the 15 day public comment period, but were not related to any of DSA-SS's proposed 15 day modifications. Each of these five comments were directed to Section 2211A - Light Modular Steel Moment Frames for Public Elementary and Secondary Schools, and Community Colleges. DSA's response, provided after comment #5, addresses all five comments.

Comment #1 - DSA-SS 02/06 - Section 2211A

Commenter: Edward Mei, DSA Oakland Regional Office

Mr. Mei proposed revisions to Section 2211A.1 and 2211A.2.2 as follows (proposed revisions are indicated in double strike-out and double underline format):

1. Add new sentence at the end of 2211A.1.1 - There shall be continuity between the stacked corner columns that such continuity shall resist all forces due to seismic and wind loading and shall be capable of developing the strength of the largest column.

2. Modify the last sentence in Section 2211A.1.2 as follows: The maximum dead load of the exterior walls shall not exceed ~~40~~ 25 psf.

3. Modify Section 2211A.2.1 as follows:

2211A.2.2 ~~Beam-to-Column~~ Column to Beam Strength Ratio. At each moment-resisting connection the following shall apply:

[note - modify formula so that the sum of column strengths divided by the sum of the beam strengths is greater than or equal to 1.25.]

Exceptions:

~~1. Beam-column connections at the floor level beams of first or second story modules need not comply with this requirement.~~

2. ~~Beam-to-column~~ column to beam strength ratios less than ~~1.4~~ 1.25 are allowed if proven to be acceptable by analysis or testing.

Commenter's Reason: The rationale for this comment regarding Section 2211A is non-confomance with criteria #1, #3, #4 and #8 of the nine-point criteria, and the following:

2211A.1.1 - to conform with current design practices

2211A.1.2 - heavy walls would be contrary with the intent of "light modular"

2211A.2.2 - to conform with current AISC provisions

2211A.2.2 Exceptions - to conform with current practice of steel moment frame design

Comment #2 - DSA-SS 02/06 - Section 2211A

Commenter: Lawrence Zeitoun , DSA Los Angeles Regional Office

Mr. Zeitoun proposed that Section 2211A be withdrawn in its entirety.

Commenter's Reason: The rationale for this comment regarding Section 2211A is non-confomance with criteria #1, #2, #3, #4, #5 and #6 of the nine-point criteria. The following statements were also provided:

Modular steel structures of the size and magnitude indicated in the proposed section 2211A.1.1, other than for a single story 24' x 40' relocatable building, which were originally created to provide emergency classroom needs for our school kids, should be designed as regular steel structures. No preference to this type of construction procedure should be given, knowing that some serious safety issues are still not addressed by the proposed changes. All code provisions are based on years of research, testing, and retesting. Where is the research and testing backup for the proposed changes?

There is no need to duplicate or create separate sections in the code to handle structures that are shop fabricated and which do not follow the same inspection rules as structures built on-site. When structural errors are made in the shop fabrication process, it is very difficult to correct the problem in the field. The structural integrity of the structure may be jeopardized when major field corrections are generated.

There is a tremendous lack of continuity in these structures, given the fact that they are assembled in modules that are independently fabricated in the shop and transported to their final destination to be attached together on-site. When second story concrete floors are used, these rigid diaphragms are discontinuous at the module lines; some serious consideration as to the distribution of the lateral forces among various modules needs to be considered. There is an issue with the column continuity between floors and module-to-module continuity along the perimeter of the structure that needs to be addressed. There is an issue with using light gauge metal in ordinary moment frames. There is an issue of misalignment of these modules during installation, leading to some gaps between the modules that necessitate shimming between the modules - a practice that is very common in the current construction procedure.

The AISC Specification for Structural Steel Buildings, and the ANSI/AISC 341-02 Seismic Provisions for Structural Steel Buildings is and should be the basis for the design and construction of these structures, until further studies can justify the proposed changes.

Comment #3 - DSA-SS 02/06 - Section 2211A

Commenter: Michael Ciortea , DSA Los Angeles Regional Office

Mr. Ciortea proposed that Section 2211A be held for further study, and that the following text be added to Section 2211A.2.5:

> "Multistory assemblies connections designed to resist lateral loads as moment connections shall be permitted only when prior testing data on such connection exists. The data shall reflect testing done on identical size beam and identical size column connection. The test data shall show that the connection strength and inelastic rotation is within the design parameters."

Commenter's Reason: The rationale for this comment regarding Section 2211A is non-confomance with criteria #4 of the nine-point criteria. The proposed section is arbitrary in the sense that it establishes a lower standard than similar moment frame structures.

Comment #4 - DSA-SS 02/06 - Section 2211A

Commenter: Mehran Keshavarzian , DSA Los Angeles Regional Office

Mr. Keshavarzian proposed that Section 2211A be held for further study.

Commenter's Reason: The rationale for this comment did not identify non-conformance with any specific item of the nine-point criteria. The following statements were provided:

1. The proposed section 2211A is unreasonable and unfair in the whole. It favors the modular steel building industry over non-modular steel structures without any justifications.

2. There is no national specification, published standard, or model code that is relevant to the proposed section.

3. There is no published report to justify many of the relaxed requirements of the proposed section such as:

   - connections of beams to columns design per Section 2211A.2.2

   - maximum loading requirements per section 2211A.1.2

   - permission to analyze the individual modules of stacked assemblies independently per section 2211A.2.5.

4. The proposed section makes school buildings less conservative and safe under seismic load than similar or identical non-school constructions designed per model code provisions.

Comment #5 - DSA-SS 02/06 - Section 2211A

Commenter: Raymond Chang , DSA Los Angeles Regional Office

Mr. Keshavarzian proposed that Section 2211A be disapproved.

Commenter's Reason: The rationale for this comment did not identify non-conformance with any specific item of the nine-point criteria. The following statements were provided:

The proposed building standard section is in direct conflict with Field Act of protecting California school children during earthquakes and the current seismic design requirements and engineering practice.

The proposed building standard section promotes "strong girder - weak column" and discourages designs of "strong column - weak girder" which is specified by all model codes. The proposed building standard section with "strong girder - weak column" design will put occupants of this type of buildings, primarily public school children, at a higher seismic risk.

There is no need to duplicate or create separate sections in the code to address modular structures. The AISC Specification for Structural Steel Buildings and the ANSI/AISC 341-02 Seismic Provisions for Structural Steel Buildings should be the basis for the design and construction of these modular structures.

DSA Response: These public comments do not address DSA's proposed 15 day modifications. At this time, DSA-SS can not propose substantive modifications to the proposed amendment as requested, as Government Code §11346.45 requires the proposing state agency to include all parties affected by a proposed code change during the code change development process. These comments were previously received and considered during the code amendment development process. DSA has determined that there are no outstanding concerns that warrant withdrawal or substantive modification of the proposed Section 2211A within this rulemaking cycle.

Section 2211A essentially prescribes design criteria that is substantially aligned with ordinary moment frame provisions in the current and next model code and referenced standards, and which would otherwise be allowed for these occupancies and building size limitations (e.g. maximum two-stories and 35 feet in height). The submitted comments suggest additional amendments that would be more restrictive than the model code and referenced standards, and for which DSA currently does not have supporting justification or cost analysis.

In the interim, DSA will develop a written interpretation, as authorized by Education Code §17308 (d), which clarifies the intent of the regulations and addresses the expressed concerns to the extent necessary. DSA will also consider proposing changes to the current amendment in a future rulemaking cycle, as deemed warranted or necessary.

DETERMINATION OF ALTERNATIVES CONSIDERED AND EFFECT ON PRIVATE PERSONS.

(Government Code Section 11346.9(a) (4))

The Division of the State Architect has determined that no alternative considered would be more effective in carrying out the purpose for which the regulation is proposed or would be as effective and less burdensome to affected private persons than the adopted regulations.

REJECTED PROPOSED ALTERNATIVES THAT WOULD LESSEN THE ADVERSE ECONOMIC IMPACT ON SMALL BUSINESSES:

(Government Code Section 11346.9(a) (5))

There are no rejected proposed alternatives to identify. This proposal will not have an adverse economic impact on small businesses.

COMMENTS MADE BY THE OFFICE OF SMALL BUSINESS ADVOCATE.

(Government Code Section 11347.6)

No comments were received from the Office of Small Business Advocate for this proposal.

COMMENTS MADE BY THE TRADE AND COMMERCE AGENCY.

(Government Code Section 11347.6)

No comments were received from the Trade and Commerce Agency for this proposal.